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R e m a r k s

Claims 1-38 are pending in the application.

Claims 8 and 18 were objected to because of various informalities.

Claims 1, 6, 15, 18, 24, 25, 29, 34, and 37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-10, 15, 24, 25, 33, 37, and 38 are rejected under 35 U.S.C. 103 as being made obvious by United States Patent No. 6,483,866 issued to Suzuki on November 19, 2002 in view of United States Patent No. 6,907,270 issued to Blanz on June 14, 2005.

Claims 11-14, 16-23, 26- 32, and 34-36 are apparently rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki and Blanz in further combination with one or more various additional references.

Each of the various rejections and objections are overcome by amendments that are made to the specification, drawing, and/or claims, as well as, or in the alternative, by various arguments that are presented.

Any amendments to any claim for reasons other than as expressly recited herein as being for the purpose of distinguishing such claim from known prior art are not being made with an intent to change in any way the literal scope of such claims or the range of equivalents for such claims. They are being made simply to present language that is better in conformance with the form requirements of Title 35 of the United States Code or is simply clearer and easier to understand than the originally presented language. Any amendments to any claim expressly made in order to distinguish such claim from known prior art are being made only with an intent to change the literal scope of such claim in the most minimal way, i.e., to just avoid the prior art in a way that leaves the claim novel and not obvious in view of the cited prior art, and no equivalent of any subject matter remaining in the claim is intended to be surrendered.

Also, since a dependent claim inherently includes the recitations of the claim or chain of claims from which it depends, it is submitted that the scope and content of any dependent claims that have been herein rewritten in independent form is exactly the same as the scope and content of those claims prior to having been rewritten in independent

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form. That is, although by convention such rewritten claims are labeled herein as having been "amended," it is submitted that only the format, and not the content, of these claims has been changed. This is true whether a dependent claim has been rewritten to expressly include the limitations of those claims on which it formerly depended or whether an independent claim has been rewriting to include the limitations of claims that previously depended from it. Thus, by such rewriting no equivalent of any subject matter of the original dependent claim is intended to be surrendered. If the Examiner is of a different view, he is respectfully requested to so indicate.

Objection to Claims

Claims 8 and 18 were objected to because of various informalities. The informalities have been corrected.

Rejection Under 35 U.S.C. 112, Second Paragraph

Claims 1, 6, 15, 18, 24, 25, 29, 34, and 37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. This ground of rejection is avoided in that applicants have eliminated the use of the word "it" from these claims as required by the Office Action.

Rejection Under 35 U.S.C. 103

Claims 1-10, 15, 24, 25, 33, 37, and 38 are rejected under 35 U.S.C. 103 as being made obvious by United States Patent No. 6,483,866 issued to Suzuki on November 19, 2002 in view of United States Patent No. 6,907,270 issued to Blanz on June 14, 2005. Regarding Suzuki, the Office Action states that elements RG1 and FR1 are a source of an orthogonal sequence which is repeatedly supplied as an output, as recited by applicants' claims, the orthogonal sequence having been developed as a function of first and second existing orthogonal sequences. The Office Action then recognizes that Suzuki fails to explicitly disclose a perfectly white spectrum should the orthogonal sequence be repeated an infinite number of times. However, continues the Office Action, Blanz teaches a white spectrum upon repeating the orthogonal sequences. Thus, concludes the Office Action, that one of ordinary skill in the art would modify Suzuki's system by including

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orthogonal sequences that would produce a white spectrum in order to retrieve the desired signal at the receiving end.

This ground of rejection is respectfully traversed for the following reasons.

It appears that the Office Action simply repeats its prior rejection under 35 U.S.C. 102, but then adds Glans for the purpose of teaching a white spectrum, to thereby create this rejection under 35 U.S.C. 103. In other words, the Office Action agreed with applicants' previously presented argument that there is no indication that any sequence that is produced in Suzuki as the combination of two existing orthogonal sequences has a perfectly white spectrum should such a sequence be repeated an infinite number of times. Thus, Suzuki fails to teach a source of an orthogonal sequence which is repeatedly supplied, the orthogonal sequence having been developed as a function of first and second existing orthogonal sequences and being such that would it have a perfectly white spectrum were it to be repeated an infinite number of times, as required by applicants' independent claims 1, 6, 15, 18, 24, 25, 34, and 37.

Applicants note that Blanz does not correct this deficiency. Notwithstanding the Office Action statement to the contrary, Blanz does not teach a white spectrum upon repeating an orthogonal sequence. The only mention of "white" in Blanz is in connection with noise, in particular, with the characterization of the noise vector of the channel being estimated. Note that the noise exists in the channel as a characteristic thereto. It is not a signal that is "supplied" as required by applicants' claims. In other words, Blanz does not teach or suggest a white spectrum in connection with a repeating orthogonal sequence signal.

Furthermore, even with impermissible hindsight from applicants' invention, there is no motivation to combine Suzuki and Blanz, especially not in the manner suggested by the Office Action. This is because there is no advantage to combine the references as neither Suzuki nor Blanz teaches orthogonal signals that have a white spectrum when repeated infinitely. Furthermore, Suzuki is about generating and receiving signals. However, the part of Blanz cited by the Office Action relates to characterizing the channel, and in particular to the noise in the channel, and not to generating or receiving signals. In particular, the white characteristic of the noise, should there be one,

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mentioned in Blanz is due to the nature of the environment in which the channels are formed. It is not based on the types of signals generated or received. One of ordinary skill in the art would not learn from a noise estimation in Blanz how to modify signals generated in Suzuki.

Additionally, applicants' claims 10, 29, and 33 each requires that there is no channel filtering performed between the demodulator and the FIR filter implementing a least squares algorithm. Such filtering is implicitly required, even if not shown in a transmitter, when sequences that do not have a perfectly white spectrum should they be repeated an infinite number of times are employed. Furthermore, in Suzuki there is no teaching of an FIR filter implementing a least squares algorithm. Thus, the combination of Suzuki and Blanz does not teach or suggest all of the elements of applicants' independent claims 10, 29, and 33.

Thus, all of applicants' independent claims are allowable over Suzuki and Blanz under 35 U.S.C. 103. Since all of the dependent claims that depend from the allowable independent claims include all the limitations of the respective independent claim from which they ultimately depend, each such dependent claim is also allowable over the combination of Suzuki and Blanz under 35 U.S.C. 103.

Claims 11-14, 16-23, 26-32, and 34-36 are apparently rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki and Blanz in combination with one or more various additional references. Applicants say "apparently" in that these are all dependent claims, and so all of the limitations from the independent claim must be met as well as the additional limitations added by the dependent claim. Since all the rejections of the independent claims rely on the combination of Suzuki and Blanz, applicant assumes that the Office Action intended to include Blanz in the combinations on which the rejection is based. If not, each of the rejections are merely copied over from the prior Office Action, and were already traversed by applicant in their prior amendment.

Assuming applicants are correct, they note that each of the grounds of rejection of these dependent claims is predicated on the validity of the rejections of the independent claims under 35 U.S.C. 103 given Suzuki in combination with Blanz. Since those rejections have been traversed, as described hereinabove, and there is no argument put

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forth by the Office Action that any of the additional references supplies that which is missing from the combination of Suzuki and Blanz, to render the independent claims obvious, these grounds of rejection cannot be maintained.

Therefore, applicants' claims are allowable under 35 U.S.C. 103.

Conclusion

It is respectfully submitted that the Office Action's rejections have been overcome and that this application is now in condition for allowance. Reconsideration and allowance are, therefore, respectfully solicited.

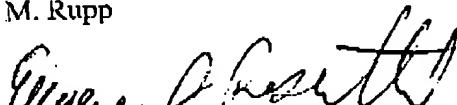
If, however, the Examiner still believes that there are unresolved issues, he is invited to call applicant's attorney so that arrangements may be made to discuss and resolve any such issues.

In the event that an extension of time is required for this amendment to be considered timely, and a petition therefor does not otherwise accompany this amendment, any necessary extension of time is hereby petitioned for, and the Commissioner is authorized to charge the appropriate cost of such petition to the Lucent Technologies Deposit Account No. 12-2325.

Respectfully,

E. Beck
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By


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Lucent Technologies Inc.

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